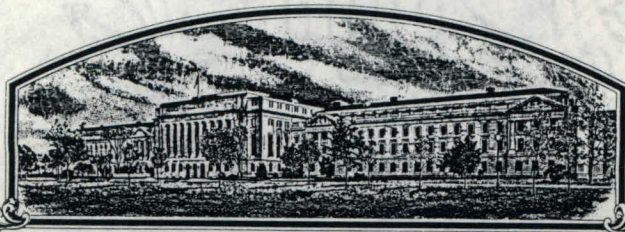


No.

9300071



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

**Great Plains Research Co., Inc.**

Whereas, THERE HAS BEEN PRESENTED TO THE  
**Secretary of Agriculture**

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (T. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

COWPEA

'Carolina Sugar'



In Testimony Whereof, I have hereunto set  
my hand and caused the seal of the Plant  
Variety Protection Office to be affixed  
at the City of Washington, D.C.  
this 31st day of August in  
the year of our Lord one thousand nine  
hundred and ninety-three.

Attest

*Kenneth H. Evans*

Commissioner

Plant Variety Protection Office  
Agricultural Marketing Service

*Mike Egan*  
Secretary of Agriculture



U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE

# APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE (Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate) Thaddeus H Busbice		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO. 7-15-4-2	3. VARIETY NAME Carolina Sugar
4. ADDRESS (street and no. or R.F.D. no., city, state, and ZIP) 3624 Kildaire Farm Road Apex, NC 27502		5. PHONE (Include area code) 919-362-1583	<b>FOR OFFICIAL USE ONLY</b> VPPO NUMBER <div style="font-size: 2em; text-align: center;">9300071</div> <div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">FILING</div> <div>Date <u>Jan. 6, 1993</u> Time 10:00 <input checked="" type="checkbox"/> A.M. <input type="checkbox"/> P.M.</div> </div> <div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">FEE</div> <div>Filing and Examination Fee: \$2150.<sup>00</sup></div> </div> <div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">RECEIVED</div> <div>Date <u>Jan. 5, 1993</u> Certificate Fee: \$250.<sup>00</sup></div> </div> <div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">DATE</div> <div>Date <u>Aug. 9, 1993</u></div> </div>
6. GENUS AND SPECIES NAME Vigna unguiculata	7. FAMILY NAME (Botanical) Leguminosae		
8. CROP KIND NAME (Common Name) cowpea	9. DATE OF DETERMINATION August 1, 1988		
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.)			
11. IF INCORPORATED, GIVE STATE OF INCORPORATION	12. DATE OF INCORPORATION		
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS			

PHONE (Include area code):

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow INSTRUCTIONS on reverse)

a. ☒ Exhibit A, Origin and Breeding History of the Variety.

b. ☒ Exhibit B, Novelty Statement.

c. ☒ Exhibit C, Objective Description of Variety.

d. ☒ Exhibit D, Additional Description of Variety.

e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership.

f. ☒ Seed Sample (2,500 viable untreated seeds) Date Seed Sample mailed to Plant Variety Protection Office 12-30-92

g. ☒ Filing and Examination Fee (\$2,150) made payable to "Treasurer of the United States."

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See section 83(a) of the Plant Variety Protection Act.)  
☐ YES (If "YES," answer items 16 and 17 below) ☒ NO (If "NO," skip to item 18 below)

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?  
☒ YES ☐ NO

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?  
☒ FOUNDATION ☐ REGISTERED ☒ CERTIFIED

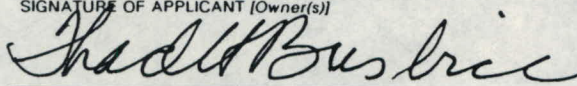
18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?  
☐ YES (If "YES," through ☐ Plant Variety Protection Act ☐ Patent Act. Give date \_\_\_\_\_.)  
☒ NO

19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETING IN THE U.S. OR OTHER COUNTRIES?  
☐ YES (If "YES," give names of countries and dates)  
☒ NO

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT [Owner(s)] 	CAPACITY OR TITLE Breeder	DATE December 30, 1992
SIGNATURE OF APPLICANT [Owner(s)]	CAPACITY OR TITLE	DATE



## COWPEA

**'CAROLINA SUGAR'**

## 14a Exhibit A, Origin and Breeding History of the Variety

**'Carolina Sugar'** is derived from a cross between 'Florida Zipper Cream' and experimental line L-63 obtained from Louisiana State University, Calhoun, LA.

The first filial generation was followed by several generations of segregation. Selections were made in each segregating generation. The line that we have identified as **'Carolina Sugar'** was selected in the eighth filial generation.

**'Carolina Sugar'** appears stable and uniform through five generations of seed increase.



## 14B. Exhibit B, Novelty Statement

'**Carolina Sugar**' is most similar to 'Florida Zipper Cream'. '**Carolina Sugar**' differs from 'Florida Zipper Cream' in the content of anthocyanin in the seed pod. '**Carolina Sugar**' shows purple color in the seed pod whereas, 'Florida Zipper Cream' does not.

'Florida Zipper Cream' has white flowers, whereas '**Carolina Sugar**' has lavender flowers.



U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
GRAIN DIVISION  
BELTSVILLE, MARYLAND 20705  
OBJECTIVE DESCRIPTION OF VARIETY  
(Cowpea)

INSTRUCTIONS: See Reverse

NAME OF APPLICANT(S)

Thaddeus H. Busbice

VARIETY NAME OR TEMPORARY DESIGNATION

Carolina Sugar

ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code)

3624 Kildaire Farm Road  
Apex, NC 27502

FOR OFFICIAL USE ONLY

PVPO NUMBER

9300071

Place the appropriate number that describes the varietal character of this variety in the boxes below.  
Place a zero in first box (e.g.  or ) when number is either 99 or less.

## 1. PLANT HABIT AT GREEN SHELL STAGE:

 1 = ERECT      2 = SEMIERECT      3 = PROCUMBENT  
4 = PROSTRATE

## 2. PLANT SIZE:

 CM. HIGH AT MATURITY

## 3. STEM COLOR:

 1 = GREEN      2 = PURPLE

## 4. NODE COLOR:

 1 = GREEN      2 = PURPLE

## 5. FOLIAGE:

 1 = OPEN      2 = COMPACT

## 6. LEAF COLOR (See Reverse):

 1 = LIGHT GREEN      2 = MEDIUM GREEN      3 = DARK GREEN

## 7. LEAF SURFACE:

 1 = SMOOTH      2 = BLISTERED 1 = DULL      2 = GLOSSY

## 8. FLOWER COLOR (See Reverse)

 1 = PURPLE      2 = LAVENDER      3 = TINGED  
4 = WHITE

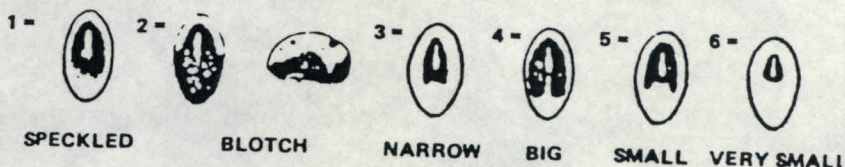
## 9. FIRST FLOWERING

 NUMBER OF DAYS

## 10. POD:

 PLACEMENT: 1 = BELOW FOLIAGE      2 = ABOVE FOLIAGE  
3 = AT FOLIAGE LEVEL LOCATION: 1 = SCATTERED      2 = BUNCHED CM. LONG       MM. WIDE CURVATURE: 1 = STRAIGHT      2 = CURVED CONstrictions: 1 = NONE      2 = SLIGHT      3 = DEEP SURFACE (Green shell maturity): 1 = DULL      2 = GLOSSY COLOR (Green shell maturity): 1 = SILVER-GREEN      2 = GREEN      3 = LIGHT PURPLE      4 = DARK PURPLE COLOR (Dry maturity): 1 = WHITE      2 = STRAW      3 = DRAB      4 = PURPLE CROSS SECTION (Green shell stage-width/height): 1 = (1: <)      2 = (1: >)      3 = (1:1)

## 11. SEED:

 NUMBER OF SEEDS PER POD       SHAPE (See Reverse): 1 = KIDNEY      2 = OVATE TO OVOID      3 = CROWDER  
4 = GLOBOSE      5 = RHOMBOID MM. LONG MM. WIDE       HILAR EYE TYPE: GM. PER 1000 SEEDS COAT: 1 = WRINKLED      2 = SMOOTH       COLOR PATTERN: 1 = SINGLE COLOR      2 = PATTERNED      3 = MARBLED  
4 = SPECKLED PRIMARY COLOR (Single color or basic color): 1 = PURPLE      2 = BLACK      3 = DULL BLACK      4 = BLUE      5 = RED  
6 = COFFEE      7 = MAROON      8 = BUFF OR CLAY      9 = PINK      0 = WHITE

SECONDARY COLORS PRODUCING THE PATTERN, MARBLING OR SPECKLING (Enter a zero in boxes where the colors do not identify the secondary colors.):

<input type="text" value="0"/> 1 = PURPLE	<input type="text" value="0"/> 2 = BLACK	<input type="text" value="0"/> 3 = DULL BLACK	<input type="text" value="0"/> 4 = BLUE	<input type="text" value="0"/> 5 = RED
<input type="text" value="0"/> 6 = COFFEE	<input type="text" value="0"/> 7 = MAROON	<input type="text" value="0"/> 8 = BUFF	<input type="text" value="0"/> 9 = PINK	<input type="text" value="0"/> 0 = WHITE



## 12. DISEASE (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

<input type="checkbox"/> 0 FUSARIUM WILT	<input type="checkbox"/> 0 ROOT KNOT NEMATODE	<input type="checkbox"/> 0 CHARCOAL ROT	<input type="checkbox"/> 0 ZONATE LEAF SPOT
<input type="checkbox"/> 0 RED LEAF SPOT	<input type="checkbox"/> 0 POWDERY MILDEW	<input type="checkbox"/> 0 COWPEA CHLOROTIC MOTTLE VIRUS	<input type="checkbox"/> 0 SOUTHERN BEAN MOSAIC VIRUS
<input type="checkbox"/> 0 BEAN YELLOW MOSAIC VIRUS	<input type="checkbox"/> 0 CUCUMBER MOSAIC VIRUS	<input type="checkbox"/> 0 BEAN POD MOTTLE VIRUS	<input type="checkbox"/> 0 SOYBEAN CYST NEMATODE
<input type="checkbox"/> 0 COWPEA YELLOW MOSAIC VIRUS	<input type="checkbox"/> 0 BACTERIAL CANKER	<input type="checkbox"/> 0 CERCOSPORA LEAF-SPOT	<input type="checkbox"/> 0 STING NEMATODE
<input type="checkbox"/> 0 RUST	<input type="checkbox"/> 0 SOUTHERN BLIGHT	<input type="checkbox"/> 0 ROOT ROT	<input type="checkbox"/> 0 OTHER (Specify) _____

## 13. INSECT (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

<input type="checkbox"/> 0 MEXICAN BEAN BEETLE	<input type="checkbox"/> 0 COWPEA APHID	<input type="checkbox"/> 0 COWPEA CURCULIO	<input type="checkbox"/> 0 STINK BUGS
<input type="checkbox"/> 0 LESSER CORNSTALK BORER	<input type="checkbox"/> 0 EUROPEAN CORNBORER	<input type="checkbox"/> 0 CORN EARWORM	<input type="checkbox"/> 0 BEET ARMYWORM
<input type="checkbox"/> 0 THRIPS	<input type="checkbox"/> 0 SERPENTINE LEAF MINERS	<input type="checkbox"/> 0 OTHER (Specify) _____	

## 14. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant size	Florida Zipper Cream	Plant habit	Florida Zipper Cream
Pod size	Florida Zipper Cream	Plant pigmentation	Calhoun Purplehull
No. days to maturity	Mississippi Pinkeye	Seed coloration	Florida Zipper Cream

## INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for completing this form:

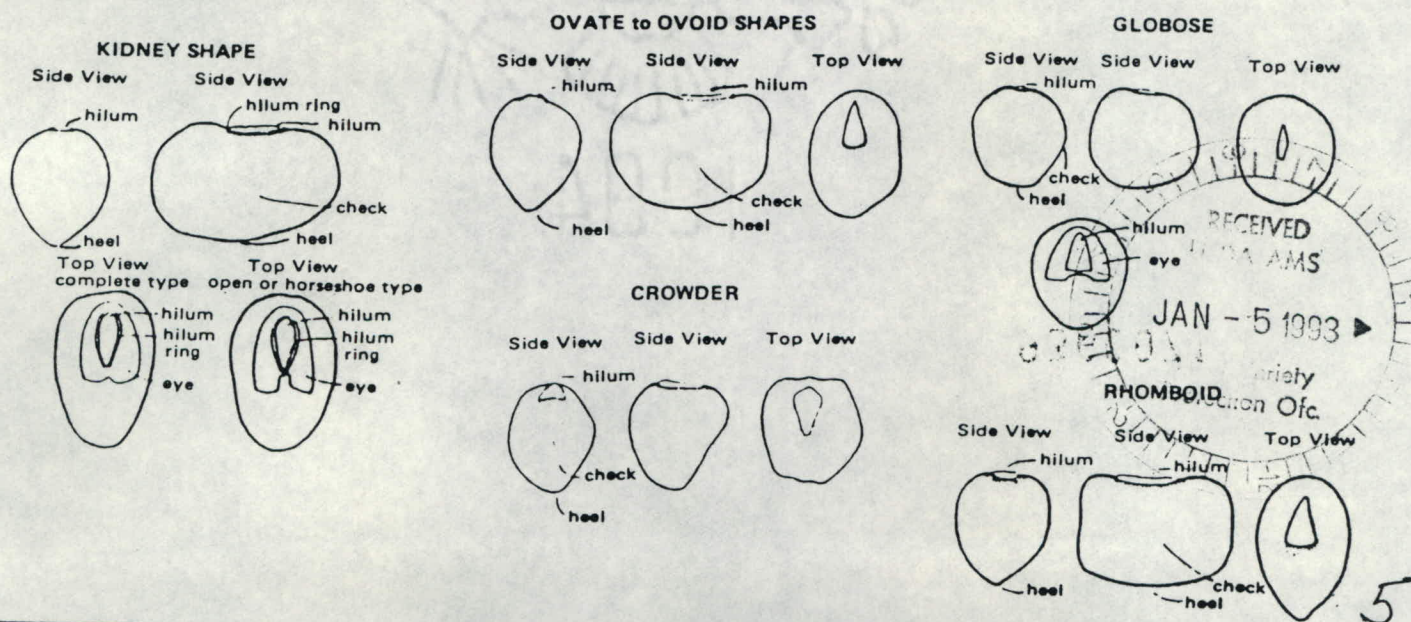
1. C. V. Piper, 1912, Agricultural Varieties of Cowpea and Related Species, U.S.D.A., Bulletin No. 229.
2. L. L. Ligon, 1958, Characteristics of Cowpea Varieties, Oklahoma State University, Bulletin B-518.
3. W. J. Spillman and W. J. Sando, 1929, Mendelian Factors in the Cowpea, papers of the Michigan Academy of Science, Arts and Letters, Vol. XI.

LEAF COLOR: Any recognized color chart may be used to determine the leaf color of the described variety. The following cowpea varieties may be used as a guide to identify colors listed:

1. Light Green - Texas Cream 40
2. Medium Green - Big Boy
3. Dark Green - California Blackeye #5.

FLOWER COLOR: White flower should be treated with a one percent solution of hydrochloric acid to determine if anthocyanin is present. If color appears as a result of the test, classify as tinged.

## TERMS USED TO DESCRIBE SHAPES:





14D. Exhibit D. Additional Description of **'Carolina Sugar'**

**'Carolina Sugar'** is an edible cowpea that was bred primarily to be used in the green stage by home gardeners. The pods are born well above the foliage for easy picking. The pods are easy to shell, and **'Carolina Sugar'** is similar to **'Florida Zipper Cream'** in this respect. **'Carolina Sugar'** is more upright and compact in growth habit than is **'Florida Zipper Cream'**.

Four photographs of **'Carolina Sugar'** are attached.

The number of days from planting to flowering for **'Carolina Sugar'** and other cowpea varieties are as follows:

Test planted 6/5/90

Variety	Days to Flowering
Mississippi Pinkeye	41
Mississippi Silver Skin	40
Freeze Green	44
Calhoun Purple Hull	46
Florida Zipper Cream	45
Knuckle Purple Hull	39
Queen Ann Blackeye	34
Carolina Sugar	44



## 14.E Statement of the Basis of Applicant's Ownership.

The variety for which Plant Variety Protection is hereby sought was developed by Dr. Thaddeus Hillery Busbice, the applicant. Dr. Busbice is employed by Great Plains Research Company, Inc. as President of the Company. By agreement between the employee and Great Plains Research Company, Inc. all right to any invention, discovery, or development made by the employee while employed by Great Plains Research Company, Inc. is the sole property of the employee.